

CLAIMS

**Claim 1.** A method for storing volatiles under pressure, comprising;  
providing a storage apparatus, wherein said storage apparatus includes  
an outer portion and a foam component, wherein said foam component is  
5 contained within an inner space defined by said outer portion;  
connecting said storage apparatus to a source for providing a  
volatile; and  
conducting said volatile from said source into said storage  
apparatus.

10 **Claim 2.** The method of claim 1, wherein said foam component includes  
closed cells with low, but nonzero, cell-wall permeability.

**Claim 3.** The method of claim 1, wherein said volatile is at least one of a  
liquid or gas or combination thereof.

15 **Claim 4.** The method of claim 1, wherein said volatile is at least one of  
ammonia, butane and propane.

**Claim 5.** The method of claim 1, wherein at least a portion of a surface of  
said foam component is sealed.

20 **Claim 6.** An apparatus for storing volatile compounds, comprising;  
an outer portion, said outer portion defining an inner volume; and  
a foam component, wherein said foam component is contained within an  
inner volume defined by said outer portion.

**Claim 7.** The apparatus of claim 6, further comprising means for  
introducing at least one volatile compound into said inner volume.

25 **Claim 8.** The apparatus of claim 6, wherein said foam component includes  
closed cells.

**Claim 9.** The apparatus of claim 6, wherein said outer portion is composed  
of at least one of a metal, alloy and plastic.

**Claim 10.** The apparatus of claim 6, wherein said foam component has a void fraction of about greater than 60%.

**Claim 11.** The apparatus of claim 6, further comprising a sealing component disposed upon at least a portion of said foam component.

5   **Claim 12.** The apparatus of claim 6, wherein said foam component is provided with at least one channel.

**Claim 13.** An apparatus for storing volatile compounds using a foam component whose geometry is cylindrical, spherical, or planar.

10   **Claim 14.** The apparatus of claim 13, wherein several such storage apparatus can be manifolded together to increase volatile delivery rate, wherein a safe delivery rate of each device is maintained.

**Claim 15.** The apparatus of claim 13, wherein, the storage apparatus is arranged in a stacked fashion, thus providing cartridges and is further enclosed in an outer enclosure containing suitable inlet and outlet fittings.

15   **Claim 16.** An apparatus of claim 14, wherein, said manifoldable devices allow for charging of volatiles of one or more cartridges or storage apparatus while allowing discharge of volatile from one or more other cartridges or storage apparatus.

20   **Claim 17.** An apparatus of claim 14, wherein a provided configuration permits replacement of one or more cartridges or storage apparatus while one or more other cartridges or storage apparatus are delivering volatiles to an end-use system.

**Claim 18.** An apparatus of claim 6 wherein said apparatus is air cooled or liquid cooled to improve charging rates.

25   **Claim 19.** An apparatus of claim 6 wherein the apparatus can be air cooled or liquid cooled to improve volatile charging rates.

**Claim 20.** The apparatus of claim 17, wherein said end-use system is a hydrogen generator.

**Claim 21.** The apparatus of claim 17, wherein said end-use system is a fuel cell power system.